

REMARKS

Claims 1-5, 7-16, 19, and 20-23 are presently pending. Claims 6, 17, and 18 have been canceled. Claims 21-23 are new.

Technical matters

In the present Office Action, claims 1-20 were rejected under 35 U.S.C. §112, ¶2, as indefinite for the use of the words "integral" and "unitary" rather than "one-piece." Although the "one-piece" terminology has not been adopted, the claims have been amended to specify that the molded body is "overmolded," which as can be seen from the specification, means that the body is molded around substantially all of the initiator subassembly. It is to be understood, however, that an initiator having two or more pieces that are integrally molded around the initiator subassembly (so as to together surround substantially all of the initiator subassembly) could fall within the invention and the presently amended claims. Thus, the present amendment is not intended or understood to narrow the claims.

Claims 4, 10, and 18 were also rejected and a portion of the specification objected to for the use of the word "coaxial." Claim 18 has been canceled, and the word "coaxial" has been eliminated from the pertinent portion of the specification and claims 4 and 10. This amendment is not intended or understood to narrow the claims.

Finally, claim 5 was rejected for the use of the term "a standard automotive airbag initiator connector configuration," and claims 13 and 16 were rejected for the use of the term "high pressure." These terms have been replaced with clearer terminology.

Prior Art Rejections

Fay

In the present Office Action, claims 1 and 8 were rejected as anticipated by U.S. Patent No. 936,227 to Fay. (Office Action, paragraph 6). Fay teaches an asphalt body surrounding a pyrotechnic subassembly including a fuse. Claims 1 and 8, as amended to include the limitation "wherein said body is substantially formed of a material possessing a tensile strength of at least 10 MPa when said material is at the temperature of 100°C," define subject matter that is not anticipated or rendered obvious in view of Fay.

Specifically, Fay teaches that "shell 5 is filled with a quantity of molten asphaltum compound 18, and this is allowed to cool, if necessary, until its temperature is considered as safe. The shell 8, ... is next taken by hand and inserted within the shell 5 and pushed downwardly into the asphaltum compound 18 and centered as nearly as practicable. ... [A]s this asphaltum compound hardens,

owing to its cooling, it becomes a waterproof filling... ." (*Fay*, column 2, lines 74-88). Clearly then, such an asphaltum compound has a very low or non-existent tensile strength at the temperature of 100°C, because it is still fluid enough to permit the insertion of shell 8. Conversely, for example, an initiator according to the present invention will likely need to retain structural integrity and proper performance at a temperature of 100°C, so it would be undesirable and impractical for an overmolded body according to the present invention to have properties such as those of the asphalt body taught in *Fay*.

Moreover, the method taught by *Fay* teaches away from the present invention, because it appears likely that the tensile strength of the body in *Fay* is rather low even at *ambient* temperature. To the extent that is the case, the structure of *Fay* relies on the support and protection of the rigid outer shell 5 that surrounds the asphalt body. Conversely, an initiator according to the present invention may need to be handled without the benefit of such a support. Consequently, the method taught in *Fay* whereby a pyrotechnic subassembly is inserted into a partially cooled molten material does not suggest itself to be amenable to modification that could result in the presently claimed structures and methods.

New claims 21-23 are also believed to define patentable subject matter over *Fay*. Specifically, claim 21 includes the limitation that the initiator subassembly includes a glass-to-metal sealed header, which is not disclosed or suggested in *Fay*. Likewise, claim 22 specifies that the initiator is an automotive airbag initiator, which is also not disclosed or suggested in *Fay*. Finally, claim 23 recites that the method of making the initiator includes injection molding the body by injecting material into a mold at a pressure of at least 1000 psi, which is also not disclosed or suggested in *Fay*.

Mramor

In the present Office Action, claims 1-5 and 8-11 were rejected as anticipated by U.S. Patent No. 6,167,808 to *Mramor*, which was filed on April 6, 1999. (Office Action, paragraph 7). Claims 7, 12-16, 19, and 20 were also rejected as obvious in view of *Mramor* combined with other references. (Office Action, paragraphs 8-11). As explained in the attached Declaration Under 37 C.F.R. § 1.131 and its exhibits, the invention presently claimed in this application was conceived prior to *Mramor*'s filing date (Declaration, ¶¶3-4), and the inventors of the present application and others on their behalf exercised diligence toward reducing the invention to practice continuously from April 6, 1999 until actual

reduction to practice (Declaration, ¶¶5-8, 10), which occurred in July of 1999. (Declaration, ¶9). Consequently, it is submitted that *Mramor* has been removed as a reference to all pending claims in this application.

Whang

In the present Office Action, claims 1-5 and 8-11 were rejected as obvious in view of U.S. Patent No. 6,009,809 to Whang combined with other references. (Office Action, paragraphs 12-16). It is believed that these obviousness rejections are overcome by the elimination of *Mramor* as a reference in this case, however, since the disclosure of *Mramor* is required to be combined with that of *Whang* to result in each of these rejections.

In any case, *Whang* does not describe or suggest an initiator that includes an overmolded body surrounding substantially all of an initiator subassembly, nor does it suggest how to make such an initiator. The insulator cup 38 of *Whang* is not molded around the initiator subassembly, and it is instead clearly a separate pre-molded piece that is placed on the initiator subassembly and surrounds a substantial portion of the initiator subassembly. The portion of the initiator that is overmolded, namely "housing 12," does not surround substantially all of the initiator subassembly. Moreover, *Whang* actually teaches against the modification of

continuing the molded housing 12 up and around the initiator's top section (in place of the insulating cup 38), because the thinness of that portion would impede appropriate material flow during the molding process.

Request to Delete Named Inventors

The undersigned hereby requests that the inventorship of this application be amended by deleting the presently named inventors, Paul Berg and Robert Renz. Due to the cancellation of claims 6, 17, and 18, their contribution to the invention is no longer being specifically claimed in this application. In this regard, a fee for \$130 accompanies this amendment, pursuant to 37 C.F.R. § 1.17(i).

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

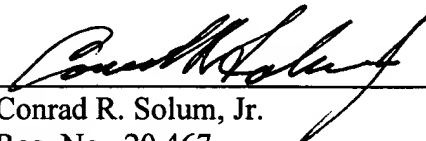
Also accompanying this amendment is a request for a two-month extension and the \$390 fee therefore, the aforementioned \$130 fee, and a \$160 fee for presentation of two additional independent claims in excess of three as will result from the entry of this amendment.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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Dated: 6/10/02

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the specification:

-- In the depicted embodiment, the initiator subassembly comprises a header assembly 20 hermetically attached (by through-weld 61) to a can 65 loaded with an output pyrotechnic charge 82. The header assembly 20 in turn consists of a ~~coaxial~~ header, a bridgewire 70 that is welded to the header, and an ignition pyrotechnic charge droplet 80 that is disposed around bridgewire 70. The ~~coaxial~~ header comprises a ground pin 30, an ~~coaxial~~, isolated center pin 40, glass 50, and an eyelet 60, with the pins 30 and 40 projecting out to form the connector end of the initiator subassembly. While this particular exemplary configuration of initiator subassembly is shown and described in detail, it will be readily apparent that various configurations of initiator subassembly can be used or modified appropriately for use, in the present invention. --

In the claims:

Claims 6, 17, and 18 are canceled.

Claims 1, 4, 5, 8, 10, 13, and 16 are amended as follows:

1. (Amended) A pyrotechnic initiator, comprising:
 - a) an initiator subassembly including a can loaded with a pyrotechnic charge, and a header assembly having a connector end; and,
 - b) a molded, integral, unitary, electrically-nonconductive, overmolded body connected to and surrounding substantially all of said initiator subassembly except for an exposed portion of said connector end, wherein said body is substantially formed of a material possessing a tensile strength of at least 10 MPa when said material is at the temperature of 100°C.
4. (Amended) The initiator of claim 3, wherein one of said electrode pins is a ground pin and the other is an ~~coaxial~~, isolated electrode pin.
5. (Amended) The initiator of claim 4, wherein said body and said electrode pins together form an AMPHENOL®-compatible or serviceable or non-servicable integral standard-automotive airbag initiator connector configuration.

8. (Amended) A method for making a pyrotechnic initiator having an overmolded body, comprising the steps of:
- a) providing an initiator subassembly including a can loaded with a pyrotechnic charge, and a header assembly having a connector end; and,
 - b) molding an integral, unitary, electrically-nonconductive, overmolded body around said subassembly, such that said body is connected to and surrounds substantially all of said initiator subassembly except for an exposed portion of said connector end, wherein said body is substantially formed of a material possessing a tensile strength of at least 10 MPa when said material is at the temperature of 100°C.
10. (Amended) The method of claim 9, wherein said step of providing includes providing an initiator subassembly that includes a ground pin and an coaxial, isolated electrode pin.
13. (Amended) The method of claim 12, wherein said step of molding includes injecting molten material into said mold under high a pressure of at least 1000 psi.
16. (Amended) The method of claim 15, wherein said step of molding includes injecting said molten material into said mold under high a pressure of at least 1000 psi.